

# *Ulmus thomasi*: The Hard Elm That's Hard to Find

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If you hike Beech Path up the steep slope from Valley Road and continue to the point where a footpath branches off to the right, you will find a slender, stately tree next to the trail. It is a rock elm, *Ulmus thomasi*, one of only three elms native to northeastern North America. This particular specimen, accession number 444-88-A, is the only rock elm currently in the Arnold Arboretum's living collections. It is well worth seeing.

Rock elm was originally named *Ulmus racemosa* in 1831 by its discoverer, American civil engineer David Thomas of New York. It was renamed *Ulmus thomasi* in 1902 by Arboretum director Charles Sprague Sargent when he determined that another elm already had the name *Ulmus racemosa*. Rock elm is most common in the northeastern and north-central states, with the core of its range stretching from north-central Wisconsin to southern Michigan and southern Ontario. Populations exist as far south as Tennessee, but it is primarily a cold-weather tree, not often found in regions warmer than USDA Plant Hardiness Zone 5 (average annual minimum temperature -10 to -20°F [-23.3 to -28.9°C]). Rock elm is rarely encountered in New England, likely because it has a strong preference for limestone substrates, which are not common here.

Back in the 1910s to 1930s there were as many as twelve rock elms growing on the Arboretum grounds, all procured from well known plant nurseries of the era. Most of these trees eventually died of Dutch elm disease (DED), a devastating fungal vascular wilt. Four succumbed to Boston's first big DED epidemic in 1946. Two died of DED in 1987, another three in 1989. Specimen 17925-B was recorded as being in "excellent health" on May 5, 1989. It was cut down 75 days later, on July 19, dead from DED. Our current living specimen was propagated in 1988 as a cutting from a then 102-year-old tree (accession 17926-A) that was planted at the Arboretum in 1886.

One of the best traits for identifying a rock elm—not often listed in identification books—is its form. The species is typically tall and slender, with a single bole that gets remarkably tall before it splits into a narrow crown. Rock elms growing in crowded forest situations also usually have small corky branches that droop downward from the middle third of the main bole. The Arboretum's specimen has grown out in the open all its life and does not have drooping branches at mid-bole, though it does have a strikingly straight main trunk and currently measures 44.24 feet (13.48 meters) tall with a dbh (diameter at breast height) of 18.31 inches (46.5 centimeters).

Rock elm leaves can look much like American elm leaves. Tree identification books generally list three identifier traits for rock elm: *branches* with 3 to 5 irregular corky wings; *inflorescences* of 7 to 13 flowers arranged in a long, pendulous raceme; and *fruits* (samaras) covered with tiny hairs and an inflated paper wing that is not distinct from the seed case. Unfortunately those unique traits are not always present. Some rock elms, including our specimen, lack corky twigs. Rock elms don't reproduce until about age 20, don't produce full seed crops until age 45, and produce bountiful seed crops only once every 3 to 4 years. Seeds drop from the tree as soon as they ripen, so from May to February there are no reproductive structures to aid identification.

The timber of rock elm is especially prized for its hardness. It has interlaced fibers that make it almost impossible to split, yet easy to bend. It is especially durable underwater. In past centuries, much rock elm was cut and shipped to Great Britain to build wooden battleships. Rock elm is also highly regarded for its beautiful gold fall foliage color, so consider a hike up Beech Path this autumn. A tall, handsome native elm is awaiting you.

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